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10/571,469	03/13/2006	Frank Mattner	286808US0PCT	6417

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EXAMINER	
KOLKER, DANIEL E	

ART UNIT	PAPER NUMBER
1649	

NOTIFICATION DATE	DELIVERY MODE
08/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/571,469	MATTNER ET AL.	
	Examiner	Art Unit	
	DANIEL KOLKER	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) *1-3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/12/06, 3/30/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The remarks filed 14 May 2008 have been entered. Claims 1 – 4 are pending.

Election/Restrictions

2. Applicant's election with traverse of Group II (claim 4) and species C (anti-$A\beta_{42}$ antibodies) in the reply filed on 14 May 2008 is acknowledged. The traversal is on the ground(s) that:

A) The prior art reference cited by the office does not anticipate claim 1, and therefore does not provide evidence that unity of invention is lacking;

B) The office has failed to provide evidence that the groups of inventions are patentably distinct;

C) The office has filed to explain why each group lacks unity with each other group, specifically the office has failed to explain which unique special technical features are in each group; and

D) The office has failed to consider that the inventions are related as defined under 37 CFR 1.475(b).

This is not found persuasive for the reasons set forth below.

With respect to A), applicant points to pages 10 – 11 as providing an explicit definition of the apheresis device set forth in claim 1. The examiner has closely studied these pages and has determined that the definition is exemplary and not limiting. There are no structural features required for the claimed "apheresis device" beyond what is recited in claims 1 – 3. Note that claim 1 requires the presence of a carrier being capable of contacted with blood, and p. 10 (final sentence) of the specification refers to "the inventive solid carrier (e.g. as a column) in the apheresis device." Thus given the claims as defined by and read in light of the specification, it appears that the apheresis device of claim 1 can be a solid support with an antibody attached to it, which is taught by McConlogue (U.S. 5,604,102), as the prior art product meets all the structural and functional limitations recited in claim 1. Note that the reference by McConlogue is not the only one which anticipates claim 1; for example Frangione (WO 2004/056318, published 8 July 2004, international filing date 18 December 2003, claiming benefit of a U.S. Provisional application filed 19 December 2002, cited on IDS filed 12 June 2006) teaches apheresis devices comprising solid carriers including APP-binding receptors; see for example p. 6 first paragraph, p. 7 line 24 – p. 8 line 30.

With respect to B), the examiner notes that groups I and II, as set forth in the restriction requirement mailed 14 April 2008, are related as product and process of using. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the method of claim 4, treatment of Alzheimer's disease or prevention of same, can be performed by administration of protein to patients; see for example Schenk (U.S. Patent Application Publication 2004/0081657), especially claims 8 and 41 – 42. Thus even though detailed explanation of how the groups are independent or distinct is not required when determining unity of invention in a case filed under 35 USC § 371, the groups set forth are in fact distinct.

With respect to C), there cannot possibly be a special technical feature which links all groups, since there is not a special technical feature in Group 1. As defined by PCT Rule 13, the term "special technical feature" refers to "those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the art." As set forth above and in the restriction requirement mailed 14 April 2008, McConlogue teaches an apheresis device that anticipates claim 1. Therefore there is no special technical feature as defined by PCT Rule 13 in group 1. Since there is no special technical feature in group 1, there cannot possibly be the same special technical feature in all groups.

With respect to D), 37 CFR 1.475(a) indicates that the specifics of part (b) of that rule only apply in those circumstances when there is in fact a special technical feature common to multiple inventions. 37 CFR 1.475(a) states that:

> Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. [emphasis added]

Since the claimed inventions (i.e groups 1 and 2 as set forth in the restriction requirement) lack unity of invention and do not share a special technical feature as defined in PCT Rule 13 and 37 CFR 1.475(a), the specific combinations of categories to be examined together in 37 CFR 1.475(b) do not apply.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 1 – 3 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 14 May 2008.

4. Claim 4 is under examination.

Claim Objections

5. Claim 4 is rejected to because of the following informalities: it depends from claim 1, which is non-elected. Appropriate correction is required.

This objection could be overcome by amending claim 4 to incorporate all the structural features recited in claim 1.

Claim Rejections - 35 USC §§ 101 and 112

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 provides for the use of an apheresis device, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

7. Claim 4 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for

example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

Claim 4 is drawn to a method of using an apheresis device and, by referring to claim 1, the device is to comprise a carrier that "includes an amyloid-β-precursor-protein (APP)-binding receptor." These receptors are not fully described by the specification. The specification discloses, at p. 11 first two paragraphs, that such receptors include "all those substances… which have an affinity to the ligand APP and its biological by-products", and includes antibodies as well as "proteins, peptides, gangliosides, or nucleic acids". The specification fails to disclose to the public the structures of the proteins, peptides, gangliosides, and nucleic acids that bind to APP. Claim 4 encompasses a method of using a device comprising a carrier with any such molecule. In order to meet the written description requirement, the specification must provide to the public evidence of possession of what is claimed. While the instant claim is a method, the specification must nonetheless provide evidence of possession of the starting materials required for the claimed method. This can be accomplished, for example, by actual reduction to practice, disclosure of complete or partial structure, disclosure of physical or chemical properties common to all members of the genus of structures, functional characteristics coupled with a correlation (either known or disclosed by the specification) between structure and function. See the newly revised Written Description Training Materials, available on the Office's website at http://www.uspto.gov/web/menu/written.pdf , particularly p. 1. Here, the specification fails to disclose the structures, either at the nucleic acid or amino acid level common to all members of the genus of APP-binding receptors. The specification fails to disclose gangliosides as well. As

there is not evidence of possession of these products, the claim drawn to methods of using these products does not meet the written description requirement.

The examiner notes that antibodies against $A\beta_{42}$, elected by applicant in the remarks filed 14 May 2008, are considered described. Amendment of claim 4 to methods of using an apheresis device comprising a carrier with these antibodies may be sufficient to overcome this rejection.

9. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treatment of Alzheimer's disease by contacting blood with an apheresis device comprising a column that comprises antibodies against Aβ42, does not reasonably provide enablement for prevention of the disease, or for all "use", or for all APP receptors, as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

There are many factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is undue. These factors include, but are not limited to: 1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (FED. Cir. 1988).

In this case, the nature of the invention is complex. The claim is drawn to a method that encompasses prevention of a neurodegenerative disease by using an apheresis device. The claims are broad in that they encompass total elimination of disease and complete prevention of same, and encompass any and all uses of the apheresis device, and encompass methods of using devices with any receptor of APP, broadly defined in the specification to be any molecule that binds it. However, what is disclosed is much more narrow. It would take undue experimentation for the skilled artisan to make and use the full scope of the claimed invention in the absence of undue experimentation.

Turning first to the carriers to be used in the apheresis device that is a starting material for the claimed method, the specification fails to disclose to the skilled artisan how to make any and all APP receptors, which must be present in the device. The specification states, at p. 11,

that the receptor can be any nucleic acid, protein, or ganglioside that binds APP. The specification provides no examples of any nucleic acids or gangliosides that have this property. While a few proteins are discussed, the specification fails to show to the skilled artisan which regions are either necessary or sufficient for APP binding to occur. At the time the invention was made, the art recognized that the shape of a protein determines its function. See for example Alberts (1994. Molecular Biology of the Cell, pp. 104 – 111), who teaches that the shape of a protein determines its function (p. 111). The specification does not teach the skilled artisan which protein shapes or sequences are either necessary or sufficient for a protein to bind APP. Similarly, it does not teach which nucleic acid or ganglioside structures will bind APP. Given the lack of working examples and the paucity of guidance commensurate with the full scope of the claim, the skilled artisan would have to resort to undue experimentation on his or her own to determine how to make the full genus of molecules to be used in the apheresis device and then to determine which of those, if any, are able to either treat or prevent Alzheimer's disease.

The specification also fails to teach the full scope of uses of the apheresis device. Claim 4 recites only a single step, namely "use". The specification does not teach the skilled artisan which uses are effective in achieving the intended result of prevention or treatment of disease. The skilled artisan would have to determine, on his or her own, what uses are required and what uses will not be effective in treatment or prevention. Clearly, given the total lack of any positive steps recited in the claimed method, the skilled artisan would have to resort to undue experimentation to practice the full (unlimited) scope of the claimed method.

Finally, the specification is not enabling for prevention as claimed. The art recognizes that all patients are at risk of Alzheimer's disease. See for example Cassel et al. (2001. Demography and Epidemiology of Age-Associated Neuronal Impairment. In: Functional Neurobiology of Aging, pp. 31 - 50). Cassel teaches that the risk of Alzheimer's increases with age; see in particular end of p. 35 and Figure 4.3 on p. 36. In order to achieve prevention of disease as broadly claimed, the specification would have to provide evidence that the risk of disease is totally eliminated in patients. This is not demonstrated in the specification, and the specification fails to provide guidance to the skilled artisan as to how to carry out the claimed "use" such that all patients remain free of disease. Given the breadth of the claim, the lack of guidance and working examples commensurate with the full scope of the claim, and the state of

the prior art, an unduly large degree of experimentation would be required in order to practice the full scope of the claimed method.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Frangione (WO 2004/056318, published 8 July 2004, international filing date 18 December 2003, claiming benefit of a U.S. Provisional application filed 19 December 2002, cited on IDS filed 12 June 2006).

Frangione teaches use of apheresis devices as recited in claim 4 for treatment of Alzheimer's disease. See for example p. 25 line 15 – p. 30 line 20 which teaches the methods of treatment via contacting blood with the appropriate device. Note that Frangione teaches that compounds which bind to Aβ are immobilized on a carrier such as a solid support within the device (p. 28 final paragraph) and specifically teaches that antibodies can be used as the Aβ-binding elements. (p. 29 lines 2 - 7). At p. 16 lines 8 – 11, Frangione teaches that appropriate Aβ-binding compounds include antibodies against the 42-amino-acid form of Aβ; these antibodies were elected by applicant in the response filed 14 May 2008. See also p. 23 lines 14 – 20 and p. 26 lines 1 – 5, where Frangione teaches that the invention is to treat Alzheimer's patients. As the reference teaches use of an apheresis device for treatment of Alzheimer's, wherein the device comprises a solid support (carrier) that includes anti-Aβ42 antibodies, it anticipates every element of claim 4.

11. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Frangione (2007/0010435).

Frangione '435 publication is the publication of the national-stage entry of the international application (PCT/US03/40744) that is the basis of the WO 2004/056318 publication cited in the rejection above. Thus the disclosures are identical, and the reasons why claim 4 is anticipated by the '435 publication are therefore the same. Note however that the '435 publication claims the same patentable invention as recited in instant claim 4; see claims 16, 20, and 26 in particular. As this is a U.S. Patent Application Publication claiming the same invention, the rejection cannot be overcome by a declaration under 37 CFR 1.131.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 4 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 22 – 27 of copending Application No. 11/571970. Although the conflicting claims are not identical, they are not patentably distinct from each other

because the claims in the '970 application are specific as they require an additional step (administration of an agent) beyond the step of apheresis as claimed herein. The instant claim is generic, it requires only the step of using the apheresis device, which also appears in independent claim 22 of the '970 application. As the claims in the '970 application are species, they would anticipate the instant claim 4.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

13. No claim is allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL KOLKER whose telephone number is (571)272-3181. The examiner can normally be reached on Mon - Fri 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel E. Kolker, Ph.D./
Patent Examiner, Art Unit 1649
August 12, 2008